## **ABSTRACT**

A tendon system for anchoring a floating platform to the seabed comprises composite tendon groups including one or more steel tendons in combination with tendons fabricated of synthetic materials. The synthetic composite tendons may be coaxially located within the steel tendons. Tendon resonance is inhibited by exerting damping forces through supplementary tendons/cables connecting a passive or active damping force system to the seabed. In another aspect of the invention, a passive tuned oscillator or an active driven mass oscillator provides damping of platform resonance motions.

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